hormone is an amino acid other than glycine or alanine, said variant having growth hormone receptor antagonist activity, with the proviso that said antagonist is not human growth hormone having all of the following substitutions and no others: Y111V, L113I, K115E, D116Q, E118K, E119R, G120L, Q122E, T123G, G126L, R127I and E129S.

120 ~~121~~ (new). The nucleic acid molecule of claim 120 which is a DNA molecule.

121 ~~122~~ (new). The nucleic acid molecule of claim 121 in which the amino acid at the position corresponding to amino acid Gly 119 of bovine growth hormone is arginine.

122 ~~123~~ (new). The nucleic acid molecule of claim 121 in which the amino acid at the position corresponding to amino acid Gly 119 of bovine growth hormone is tryptophan.

123 ~~124~~ (new). The nucleic acid molecule of claim 121 in which the amino acid at the position corresponding to amino acid Gly 119 of bovine growth hormone is proline.

124 ~~125~~ (new). The nucleic acid molecule of claim 121 in which the amino acid at the position corresponding to amino acid Gly 119 of bovine growth hormone is lysine.

125 ~~126~~ (new). The nucleic acid molecule of claim 121 in which the amino acid at the position corresponding to amino acid Gly 119 of bovine growth hormone is leucine.

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126 ~~127~~ (new). The molecule of claim 121 where the vertebrate growth hormone is a mammalian growth hormone.

127 ~~128~~ (new). The nucleic acid molecule of claim 127 in which the amino acid at the position corresponding to amino acid Gly 119 of bovine growth hormone is arginine.

128 ~~129~~ (new). The nucleic acid molecule of claim 127 in which the amino acid at the position corresponding to amino acid Gly 119 of bovine growth hormone is tryptophan.

129 ~~130~~ (new). The nucleic acid molecule of claim 127 in which the amino acid at the position corresponding to amino

acid Gly 119 of bovine growth hormone is proline.

130 ~~131~~ (new). The nucleic acid molecule of claim 127 in which the amino acid at the position corresponding to amino acid Gly 119 of bovine growth hormone is lysine.

131 ~~132~~ (new). The nucleic acid molecule of claim 127 in which the amino acid at the position corresponding to amino acid Gly 119 of bovine growth hormone is leucine.

132 ~~133~~ (new). The nucleic acid molecule of claim 127 in which the mammalian growth hormone is human growth hormone.

133 ~~134~~ (new). The nucleic acid molecule of claim 133 in which the amino acid at the position corresponding to amino acid Gly 119 of bovine growth hormone is arginine.

134 ~~135~~ (new). The nucleic acid molecule of claim 133 in which the amino acid at the position corresponding to amino acid Gly 119 of bovine growth hormone is tryptophan.

135 ~~136~~ (new). The nucleic acid molecule of claim 133 in which the amino acid at the position corresponding to amino acid Gly 119 of bovine growth hormone is proline.

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136 ~~137~~ (new). The nucleic acid molecule of claim 133 in which the amino acid at the position corresponding to amino acid Gly 119 of bovine growth hormone is lysine.

137 ~~138~~ (new). The nucleic acid molecule of claim 133 in which the amino acid at the position corresponding to amino acid Gly 119 of bovine growth hormone is leucine.

138 ~~139~~ (new). A non-naturally occurring nucleic acid molecule which encodes a variant of a vertebrate growth hormone, wherein the variant comprises an amino acid sequence which is at least 80% identical to the native vertebrate growth hormone amino acid sequence, and wherein the amino acid position corresponding to amino acid Gly 119 of bovine growth hormone is an amino acid other than glycine or alanine, said variant having growth hormone receptor antagonist activity, where said vertebrate growth hormone is selected from the

group consisting of bovine, porcine, ovine, rat, flounder, yellowtail, tuna, salmon and chicken growth hormones.

139 ~~140~~ (new). The nucleic acid molecule of claim 139 which is a DNA molecule.

140 ~~141~~ (new). The nucleic acid molecule of claim 140 in which the mammalian growth hormone is bovine growth hormone.

141 ~~142~~ (new). The nucleic acid molecule of claim 140 in which the mammalian growth hormone is porcine growth hormone.

142 ~~143~~ (new). The nucleic acid molecule of claim 140 in which the mammalian growth hormone is ovine growth hormone.

143 ~~144~~ (new). The nucleic acid molecule of claim 140 in which the mammalian growth hormone is rat growth hormone.

144 ~~145~~ (new). The nucleic acid molecule of claim 140 in which the amino acid at the position corresponding to amino acid Gly 119 of bovine growth hormone is arginine.

145 ~~146~~ (new). The nucleic acid molecule of claim 140 in which the amino acid at the position corresponding to amino acid Gly 119 of bovine growth hormone is tryptophan.

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146 ~~147~~ (new). The nucleic acid molecule of claim 140 in which the amino acid at the position corresponding to amino acid Gly 119 of bovine growth hormone is proline.

147 ~~148~~ (new). The nucleic acid molecule of claim 140 in which the amino acid at the position corresponding to amino acid Gly 119 of bovine growth hormone is lysine.

148 ~~149~~ (new). The nucleic acid molecule of claim 140 in which the amino acid at the position corresponding to amino acid Gly 119 of bovine growth hormone is leucine.

~~149~~ 150 (new). A non-naturally occurring nucleic acid molecule which encodes a variant of a mammalian growth hormone, wherein the variant comprises an amino acid sequence which is at least 80% identical to the native mammalian growth hormone amino acid sequence, and wherein the amino acid position corresponding to amino acid Gly 119 of bovine growth

hormone is an amino acid other than glycine or alanine, said variant having growth hormone receptor antagonist activity, where said variant has an alpha helix which is at least 80% identical, but not completely identical, to the alpha helix of said mammalian growth hormone which corresponds to the third alpha helix of bovine growth hormone.

150 ~~151~~ (new). The nucleic acid molecule of claim 150 in which the mammalian growth hormone is human growth hormone.

151 ~~152~~ (new). The nucleic acid molecule of claim 150 in which the mammalian growth hormone is bovine growth hormone.

152 ~~153~~ (new). The nucleic acid molecule of claim 150 in which the amino acid position corresponding to amino acid Gly119 of bovine growth hormone is arginine.

153 ~~154~~ (new). The nucleic acid molecule of claim 150 in which the amino acid position corresponding to amino acid Gly119 of bovine growth hormone is tryptophan.

154 ~~155~~ (new). The nucleic acid molecule of claim 150 in which the amino acid position corresponding to amino acid Gly119 of bovine growth hormone is proline.

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155 ~~156~~ (new). The nucleic acid molecule of claim 150 in which the amino acid position corresponding to amino acid Gly119 of bovine growth hormone is lysine.

156 ~~157~~ (new). The nucleic acid molecule of claim 150 in which the amino acid position corresponding to amino acid Gly119 of bovine growth hormone is leucine.

157 ~~158~~ (new). The nucleic acid molecule of claim 121 in which the amino acid position corresponding to amino acid Gly119 of bovine growth hormone is not proline.

158 ~~159~~ (new). The nucleic acid molecule of claim 121 in which the amino acid at the position corresponding to amino acid Gly 119 of bovine growth hormone is at least as large in volume as proline.

159 ~~160~~ (new). The nucleic acid molecule of claim 121 in